UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/702,160	10/30/2000	Thomas C. Harrop	50671-P012US-10004457	1336

29053 7590 09/24/2004

DALLAS OFFICE OF FULBRIGHT & JAWORSKI L.L.P.
2200 ROSS AVENUE
SUITE 2800
DALLAS, TX 75201-2784

EXAMINER	
MAURO JR, THOMAS J	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/702,160	HARROP, THOMAS C.	
	Examiner	Art Unit	
	Thomas J. Mauro Jr.	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to the amendment filed on June 3, 2004. Claims 1-58 remain pending and are presented for examination. A formal action on the merits of claims 1-58 follows.

2. Objections made against the drawings and the claims have been overcome in light of the amendments made.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-8 and 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Ballantine et al. (U.S. 6,446,123).

With respect to claim 1, Ballantine teaches a method for managing a network comprising the steps of:

polling resources of the network to gather status information about the network **[Ballantine -- Col. 2 lines 41-45, lines 52-56 and lines 61-64, Col. 4 lines 12-21, lines 29-39 and 47-64, Col. 5 lines 45-46 and lines 58-62 and Col. 6 lines 5-11 – Sensors in conjunction with health monitor software tool gathers data, i.e. polling, across the network to read network performance and operational information]**;

evaluating the gathered status information and based on the gathered status information, predicting whether a future performance problem is to be encountered within the network **[Ballantine -- Col. 2 lines 38-45 and lines 52-64, Col. 4 lines 9-21, Col. 5 lines 45-62, Col. 6 lines 5-11, lines 25-29 and lines 35-38, Col. 7 lines 40-60 and Col. 8 lines 35-67 – Status and operational information gathered from network are constantly used in monitoring and evaluating the system to predict system health. This received status and operational data is used by the health monitoring system to base its future prediction of the health and performance of the network]**; and

With respect to claim 2, Ballantine further teaches determining an appropriate action for preventing said performance problem from occurring **[Ballantine -- Col. 6 lines 5-11 and Col. 7 lines 51-60 – System determines solution and appropriate actions needed to be taken to prevent future predicted problem]**.

With respect to claim 3, Ballantine further teaches wherein said determining step includes determining said appropriate action from at least one previously defined rule **[Ballantine -- Col. 7 lines 40-60 and Col. 8 lines 35-67 – System is fully integrated such that the rules are used**

in conjunction with the monitoring system to predict problems and when they are likely to occur. Solutions or appropriate actions are then determined based upon the rule being compared, i.e. a given threshold, etc, and the current state of the system].

With respect to claim 4, Ballantine further teaches initiating said appropriate action before said performance problem occurs in an attempt to prevent said performance problem **[Ballantine -- Col. 7 lines 55-60 – After recommending appropriate action, system initiates the action by either scheduling maintenance, ordering a necessary part or contacting a maintenance technician or maintenance administrator, etc...]**.

With respect to claim 5, Ballantine further teaches wherein said evaluating of the gathered status information further includes correlating the gathered status information with at least one previously defined rule **[Ballantine -- Col. 8 lines 35-67 and Col. 9 lines 1-14 – System predicts future problems by comparing gathered status information against the policies, i.e. rules, of the system, i.e. violation of an 80% load policy]**.

With respect to claim 6, Ballantine further teaches wherein the at least one rule defines a known pattern for status information that foreshadows the occurrence of a performance problem **[Ballantine -- Col. 6 lines 24-34 – System "learns from experience" and can modify and adapt policies according to past and current monitored status information, i.e. patterns, such as Mother's Day produces a heavy call volume and which hours are the highest, etc...]**.

With respect to claim 7, Ballantine further teaches wherein said performance problem is any one or more of the problems selected from:

Operability problem of one or more network elements, operability problem of the network, failure of one or more network elements, failure of the network, integrity problem of one or more network elements, integrity problem of the network, efficiency problem of one or more network elements, efficiency problem of the network, decreased processing speed of one or more network elements, decreased processing speed of the network, usage capacity problem of one or more network elements, and usage capacity problem of the network **[Ballantine -- Col. 5 lines 55-56 and Col. 7 lines 47-51 – Various performance problems are monitored and predicted by the network, including usage capacity problems of a network element, i.e. switch and usage capacity of the entire network, i.e. on Mother's Day]**.

With respect to claim 8, Ballantine further teaches wherein said gathering step includes gathering status information for any one or more of:

network status, disk status, database status, memory status, CPU status, and operating system status **[Ballantine -- Col. 4 lines 46-57 – Sensors gather status information regarding the network]**.

With respect to claim 10, Ballantine further teaches wherein said providing at least one rule includes a user defining said at least one rule **[Ballantine -- Col. 5 lines 5-13 – User inputs**

information into the system, i.e. a policy or rule, which states that certain criteria or levels should always be maintained, i.e. upgrading system once it reaches 80% capacity].

With respect to claim 11, Ballantine further teaches wherein said at least one rule is implemented as software code executing on a management system **[Ballantine -- Col. 5 lines 5-7 – Health manager software, i.e. part of management system, executes and monitors rules and policies]**.

With respect to claim 12, Ballantine further teaches said at least one rule correlating disparate network elements **[Ballantine -- Col. 9 lines 32-37 – Based upon a given rule or policy, monitoring occurs at one or more different elements, i.e. switches, bay stations, routers, etc., and predicting of performance occurs at more than one element, all of which can be of any type in the system]**.

With respect to claim 13, Ballantine further teaches said at least one rule correlating disparate characteristics of one or more network elements **[Ballantine -- Col. 9 lines 32-37 – Based upon a given rule or policy, monitoring occurs at one or more different elements, i.e. routers, switches, bay stations, etc., and predicting of performance occurs at more than one element, all of which can be of any type in the system. The system allows monitoring of any network device and its characteristics, thereby requiring disparate characteristics to be monitored]**.

With respect to claim 14, Ballantine further teaches wherein said disparate characteristics include those selected from:

CPU run queue capacity, CPU run queue blocks, CPU run queue waits, context switching, memory paging, swap allocations, disk writes, disk blocking, disk waiting, disk utilization, network inbound packets, network outbound packets, network errors, and network collisions **[Ballantine -- Col. 4 lines 54-57 – Monitoring information includes outbound and inbound packets]**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ballantine et al. (U.S. 6,446,123), as applied to claim 1 above, in view of Sime (U.S. 5,961,598).

Regarding claim 9, Ballantine teaches the invention substantially as claimed including gathering status information from various network elements **[Ballantine -- Col. 4 lines 47-53 –**

Sensors gather data, i.e. polling, across the network], as aforementioned in claim 1 above, but fails to teach using distributed gateways to gather the status information.

Sime, however, teaches a system that uses a gateway to collect information about a particular network **[Sime Col. 5 lines 62-67 – Internet gateways gather and collect information for central server system]**.

Ballantine is concerned with gathering information on network resources for a management system, as is Sime.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using gateways to gather and collect information, as taught by Sime into the management system of Ballantine, in order to further collect data and resource information at various network points to ensure best usage of resources, notifications of problems and more efficient systems.

5. Claims 15-19, 22-40 and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballantine et al. (U.S. 6,446,123) in view of Sime (U.S. 5,961,598).

Regarding claim 15, Ballantine teaches the invention substantially as claimed, a system for managing a network, said system comprising:

gathering status information for one or more network elements **[Ballantine -- Col. 2 lines 41-45, lines 52-56 and lines 61-64, Col. 4 lines 12-21, lines 29-39 and 47-64, Col. 5 lines 45-46 and lines 58-62 and Col. 6 lines 5-11 – Sensors in conjunction with health monitor**

software tool gathers data, i.e. polling, across the network to read network performance and operational information];

at least one processor-based management server communicatively coupled to receive gathered status information **[Ballantine -- Figure 1, Col. 3 lines 60-64 and Col. 4 lines 47-49 – Monitoring sensors communicate the operational data back to health manager on workstation or server, i.e. processor-based]**; and

the at least one processor-based management server predicting the occurrence of a performance problem within the network based on the gathered status information **[Ballantine -- Col. 2 lines 38-45 and lines 52-64, Col. 4 lines 9-21, Col. 5 lines 45-62, Col. 6 lines 5-11, lines 25-29 and lines 35-38, Col. 7 lines 40-60 and Col. 8 lines 35-67 – Status and operational information gathered from network are constantly used in monitoring and evaluating the system to predict system health. This received status and operational data is used by the health monitoring system to base its future prediction of the health and performance of the network. In addition, system predicts future component performance and when problems are likely to occur]**.

Ballantine, however, fails to teach that the sensors reside on a polling gateway to gather the status information.

Sime, however, teaches a system that uses a gateway to collect information about a particular network **[Sime -- Col. 5 lines 62-67 – Internet gateways gather and collect information for central server system]**.

Ballantine is concerned with gathering information on network resources for a management system, as is Sime.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using gateways to gather and collect information, as taught by Sime into the management system of Ballantine, in order to further collect data and resource information at various network points to ensure best usage of resources, notification of problems and more efficient systems.

Regarding claim 16, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 15 above, including wherein said one or more network elements include a plurality of network elements distributed in the network **[Ballantine -- Col. 3 lines 8-19 – Plurality of components compose the network]**.

Regarding claim 17, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 15 above, including wherein said one or more network elements include a plurality of disparate network elements **[Ballantine -- Col. 3 lines 8-19 – Disparate or different components make up the network, including switches, routers, bay stations, peripherals, etc...]**.

Regarding claim 18, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 15 above, including wherein said at least one polling gateway includes a plurality of distributed polling gateways **[Sime -- Figure 1 and Col. 2 lines 32-33 – Plurality of gateways]**.

Regarding claim 19, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 15 above, including wherein said plurality of distributed polling gateways include polling gateways that are each operable to poll particular ones of disparate network elements **[Ballantine -- Col. 4 lines 47-53 – Sensors, located in gateway devices (as taught by Sime, shown above) poll different components of the network to gather operational data]**.

Regarding claim 22, this is a system claim corresponding to the method claimed in claim 3. It has similar limitations; therefore, claim 22 is rejected under the same rationale.

Regarding claims 23 and 24, these are system claims corresponding to the methods claimed in claims 2 and 4. They have similar limitations; therefore claims 23 and 24 are rejected under the same rationale.

Regarding claim 25, this is a system claim corresponding to the method claimed in claim 6. It has similar limitations; therefore, claim 25 is rejected under the same rationale.

Regarding claim 26, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 15 above, including wherein at least one rules defines statistical analysis of said status information that foreshadows the occurrence of a performance problem **[Ballantine -- Figures 4A, 4B, Col. 6 lines 35-38 and Col. 8 lines 9-10 and lines 26-31 – Graphs along**

with trends are used to analyze and predict future occurrence of problems, i.e. through past data, system can foresee certain threshold being met at a given date and time].

Regarding claim 27, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 15 above, including wherein at least one rule defines a known correlation of status information that foreshadows the occurrence of a performance problem **[Ballantine -- Col. 6 lines 25-34 – By monitoring operational conditions and performance trends, i.e. status information, the system learns through these tools what kinds of status reading and various elements lead to system problems, so in the future, it can more readily predict these possible problems]**.

Regarding claims 28 and 29, these are system claims corresponding to the method claimed in claims 7 and 8. They have similar limitations; therefore claims 28 and 29 are rejected under the same rationale.

Regarding claim 30, Ballantine teaches the invention substantially as claimed, a management system for managing one or more layers of a network **[Ballantine -- Col. 3 lines 42-47 – Network management system, managing in one or more layers, i.e. element management layer]**, wherein said managing includes predicting performance problems that are to occur within one or more layers of the network **[Ballantine -- Col. 6 lines 5-11 and lines 35-38 – System predicts future component performance and when problems are likely to occur]** and taking responsive actions in an attempt to prevent or timely respond to predicted

performance problems **[Ballantine -- Col. 7 lines 55-60 – After recommending appropriate action, system initiates the action by either scheduling maintenance, ordering a necessary part or contacting a maintenance technician or maintenance administrator, etc...]**, said management system comprising:

at least one processor-based management server communicatively coupled to at least one network element to gather status information for said at least one network element **[Ballantine -- Figure 1, Col. 3 lines 60-64 and Col. 4 lines 47-49 – Monitoring sensors communicate the operational data back to health manager on workstation or server, i.e. processor-based]**; and

the at least one processor-based management server including software code executing thereon, wherein said software code learns a condition for predicting a performance problem within the network from said gathered status information to enable the processor-based management server to predict the occurrence of a performance problem within the network **[Ballantine -- Col. 2 lines 38-45 and lines 52-64, Col. 4 lines 9-21, Col. 5 lines 45-62, Col. 6 lines 5-11, lines 25-29 and lines 35-38, Col. 7 lines 40-60 and Col. 8 lines 35-67 – Status and operational information gathered from network are constantly used in monitoring and evaluating the system to predict system health. This received status and operational data is used by the health monitoring system to base its future prediction of the health and performance of the network. In addition, system can learn of conditions based upon historical data and can predict future component performance and when problems will occur]**.

Ballantine, however, fails to teach that the sensors reside on a polling gateway to gather the status information.

Sime, however, teaches a system that uses a gateway to collect information about a particular network **[Sime -- Col. 5 lines 62-67 – Internet gateways gather and collect information for central server system]**.

Ballantine is concerned with gathering information on network resources for a management system, as is Sime.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using gateways to gather and collect information, as taught by Sime into the management system of Ballantine, in order to further collect data and resource information at various network points to ensure best usage of resources, notification of problems and more efficient systems.

Regarding claims 31-34, these are system claims corresponding to the system claimed in claims 16-19. They have similar limitations; therefore, claims 31-34 are rejected under the same rationale.

Regarding claim 35, this is a system claim corresponding to the system claimed in claim 20. It has similar limitations; therefore, claim 35 is rejected under the same rationale.

Regarding claim 36, this is a system claim corresponding to the system claimed in claim 21. It has similar limitations; therefore, claim 36 is rejected under the same rationale.

Regarding claim 37, this is a system claim corresponding to the method claimed in claim 3. It has similar limitations; therefore, claim 37 is rejected under the same rationale.

Regarding claims 38 and 39, these are system claims corresponding to the method claimed in claims 2 and 4. They have similar limitations; therefore, claims 38 and 39 are rejected under the same rationale.

Regarding claim 40, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 30 above, including wherein said learned condition includes a pattern for status information that foreshadows the occurrence of a performance problem **[Ballantine -- Col. 2 lines 38-45 and lines 52-64, Col. 4 lines 9-21, Col. 5 lines 45-62, Col. 6 lines 5-11, lines 25-29 and lines 35-38, Col. 7 lines 40-60 and Col. 8 lines 35-67 – Status and operational information gathered from network are constantly used in monitoring and evaluating the system to predict system health. This received status and operational data is used by the health monitoring system to base its future prediction of the health and performance of the network. In addition, system can learn of conditions based upon historical data and can predict future component performance and when problems will occur]**.

Regarding claims 42-44, these are system claims corresponding to the system claimed in claims 27-29. They have similar limitations; therefore, claims 43-44 are rejected under the same rationale.

6. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballantine et a. (U.S. 6,446,123) and Sime (U.S. 5,961,598), as applied to claims 19 and 20 above respectively, in view of Chin et al. (U.S. 6,456,306).

Regarding claim 20, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 19 above, but fails to explicitly teach disparate network communicate using different protocols.

Chin, however, teaches a system for monitoring network devices for health information, wherein the elements use different protocols, including TCP/IP and SNMP to communicate **[Chin -- Col. 5 lines 53-55 and lines 59-62]**.

Both TCP/IP and SNMP are two of the most widely known and used protocols among networked devices.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate monitoring of device health status among devices of different protocols, as taught by Chin into the performance and overall health monitoring system of Ballantine-Sime, in order

to be able to monitor all devices, regardless of communication protocol from a single point to ensure the health and performance of the network.

Regarding claim 21, Ballantine-Sime-Chin teach the invention substantially as claimed, as aforementioned in claim 20 above, wherein said disparate network elements include network elements selected from the group consisting of: SNMP network elements, CMIP network elements, and network elements using TCP/IP protocol **[Chin -- Col. 5 lines 53-55 and lines 59-62 – Both TCP/IP and SNMP protocols are used by the various elements of the network system]**.

7. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ballantine et al. (U.S. 6,446,123) and Sime (U.S. 5,961,598), as applied to claims 30 above, in view of Battat et al. (US 2003/0088663).

Regarding claim 41, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 30 above, but fails to explicitly teach wherein said learned condition includes statistical analysis of status information that foreshadows the occurrence of a performance problem.

Battat, however, discloses a system for predictively managing information systems in a time dimension by deploying neural network agents using fuzzy logic which learns of

unacceptable/problematic conditions based upon examining historical data, i.e. statistical information **[Battat -- Page 1 paragraph [0012] and page 3 paragraphs [0042-0043]]**. Both Ballantine-Sime and Battat are concerned with predicting the future health and condition of a network to thereby notify of a problem before it occurs.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the deploying of neural network agents to learn of unacceptable/problematic conditions based upon statistical data, as taught by Battat into the invention of Ballantine-Sime, in order to provide an unstructured learning system which can learn through past experiences by examining patterns and similarities from past statistical experiences thereby further extending and allowing the system to learn from experience **[Ballantine -- Col. 6 lines 27-29]**.

8. Claim 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballantine et al. (U.S. 6,446,123) and Sime (U.S. 5,961,598), as applied to claims 30 and 45 above respectively, in view of Barrack et al. (U.S. 6,047,279).

Regarding claim 45, Ballantine-Sime teaches the invention substantially as claimed, as aforementioned in claim 30 above, but fails to teach network elements are represented as an object within object-oriented software, upon which objects have attributes which are gathered. Barrack, however, teaches network elements represented as objects within object-oriented NMS software further having attributes **[Barrack -- Col. 1 lines 37-46 and Col. 5 lines 47-51]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the object-oriented management software where devices are objects with attributes, as taught by Barrack into the management system of Ballantine-Sime, in order to provide a flexible and scalable system to monitor a wide range of elements efficiently.

Regarding claim 46, Ballantine-Sime-Barrack teach the invention substantially as claimed, wherein said learned conditions includes correlation of one or more attributes **[Barrack -- Col. 5 lines 47-51 – Objects, i.e. devices have attributes which are specifics pertaining to the device]** of one or more objects to define the prediction of a performance problem **[Ballantine -- Col. 6 lines 24-34 – System "learns from experience" and can modify and adapt policies according to past and current monitored status information, i.e. Mother's Day produces a heavy call volume and which hours are the highest, etc...]**.

9. Claims 47-48, 50-51, 52-54, 55-56 and 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballantine et al. (U.S. 6,446,123) and Sime (U.S. 5,961,598), as applied to claim 30 above, in view of Kulatunge et al. (U.S. 6,353,902).

Regarding claims 47-48, 50-51, 53-54 and 55-56, Ballantine-Sime teach the invention substantially as claimed, as aforementioned in claim 30 above, but fails to teach wherein said management system includes a business management layer (claim 47), a service management layer (claim 50), a network management layer (claim 53) and an element management layer

(claim 55) upon which a performance problem can occur in any of the layers (claims 48, 51, 54 and 56).

Kulatunge, however, teaches a management system for proactively managing faults in any of the layers in a telecommunications network consisting of the standard Telecommunications Management Network (TMN) model layers – business management layer, service management layer, network management layer and an element management layer **[Kulatunge -- Col. 1 lines 57-63 and Col. 4 lines 35-37]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the pro-active fault management prediction system for the management layers of the TMN, as taught by Kulatunge into the invention of Ballantine-Sime, in order to achieve a complete monitoring system with the ability to monitor and predict faults in multiple layers which provides for decreased network downtime and an increase in customer satisfaction.

Regarding claim 52, Ballantine-Sime-Kulatunge teach the invention substantially as claimed, as aforementioned in claim 51 above, including wherein said service performance problem includes problem with the quality provided to subscribers or clients of the managed network **[Ballantine -- Col. 7 lines 47-60 – Quality drops as customers begin to have their calls blocked due to a lack of switches present in the system. This failure would cause the quality of service provided the clients to drop and customer satisfaction to fall]**.

Regarding claim 57, Ballantine-Sime-Kulatunge teach the invention substantially as claimed, wherein said management system includes a plurality of at least the following layers:

business management layer, service management layer, network management layer, and element management layer **[Kulatunge -- Col. 1 lines 57-63 – System handles all levels of the TMN]**, and wherein a plurality of said layers are correlated within said at least one rule **[Kulatunge -- Col. 3 lines 19-32 and Col. 7 lines 19-21 – Rules, i.e. log selections, can encompass any layer because protection is provided for all layers. Therefore, users who select logs can create rules, i.e. logs for more than one layer]**.

Regarding claim 58, Ballantine-Sime-Kulatunge teach the invention substantially as claimed, wherein said management system includes a plurality of at least the following layers: business management layer, service management layer, network management layer, and element management layer, and wherein said performance problem is a problem within any of said plurality of layers **[Kulatunge -- Col. 1 lines 57-63, Col. 3 lines 19-32 and Col. 7 lines 19-21 – Rules can be developed to predict performance problems in all layers of the system, therefore, a problem can occur within any layer of the TMN system]**.

10. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ballantine et al. (U.S. 6,446,123) and Sime (U.S. 5,961,598) and Kulatunge (U.S. 6,353,902), as applied to claim 48 above, in view of Quelene (US 2002/0038292).

Regarding claim 49, Ballantine-Sime-Kulatunge teach the invention substantially as claimed, as aforementioned in claim 48 above, but fail to teach wherein one network element

includes an electronic commerce system for processing transactions over the Internet, wherein a problem occurs resulting in inability to process transactions.

Quelene teaches this limitation, wherein an e-commerce system has a problem and is unable to process a business transaction **[Quelene -- Page 9 paragraph [0134]]**.

Ballantine-Sime-Kulatunge teach a management system to predict future errors or failures in any of the layers of the TMN. Quelene's e-commerce system incurs an error resulting in a transaction not being able to be processed. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the business e-commerce system of Quelene into the invention of Ballantine-Sime-Kulatunge in order to help predict and stop such as errors as those incurred by Quelene which further leads to having decreased system down time and increased revenue and customer satisfaction.

Response to Arguments

11. Applicant's arguments filed June 3, 2004 have been fully considered but they are not persuasive.

(A) Applicant contends that Ballantine requires information or parameters about a possible or future problem to be input to the health manager software tool in advance and based on the input information predicting a future problem within the network, whereas claims 1, 15 and 30 call for predicting whether a future performance

problem is to be encountered within a network be based on gathered status information.

In response to argument A, Examiner asserts that, contrary to the applicant's argument, the prediction of network health and performance problems are in fact based upon gathered status information. As is shown in the rejection above, health manager software tool monitors network parameters and conditions by reading information from system components and predicts unacceptable network performance, i.e. problems, based on the information received. See Col. 6 lines 5-11. This information is collected through sensors which collect operational data, i.e. performance data, traffic data, etc., from each component and report these data to health manager software tool. See Col. 4 lines 46-53. Therefore, prediction is based upon the received operational information, not just upon the rules defined by an administrator. Based upon the gathered operational and historical data, system can predict performance/health of a network for a future time. See Col. 8 lines 35-67. During patent examination and prosecution, claims must be given their broadest reasonable interpretation. *In re Van Geuns*, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993); *In re Prater*, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969). Giving the instant claims their broadest reasonable interpretation, "gathering status information, evaluating the status information and predicting performance problems based on the gathered information" is broad enough to read on the performance prediction system based upon gathered operational data of Ballantine.

(B) Applicant argues that Ballantine requires information or parameters to be input in advance, whereas the applicant's invention uses real-time status information to predict a future problem without having to rely on previously input information or parameters.

In response to applicant's argument (B) that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., using real-time status information to predict a future problem without having to rely on previously input information or parameters) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Ding et al. (U.S. 6,691,067) discloses an enterprise management system which includes prediction of network health based upon performance data measured.

- Liang (U.S. 6,738,811) discloses a method for monitoring the health of servers across data networks by measuring values representing the health condition of a device.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Mauro Jr. whose telephone number is 703-605-1234. The examiner can normally be reached on M-F 8:00a.m. - 4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 703-308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJM
September 14, 2004

JACK B. HARVEY
SUPERVISORY PATENT EXAMINER